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(FILE 'HOME' ENTERED AT 15:46:46 ON 02 MAR 2005)

FILE 'CAPLUS' ENTERED AT 15:46:55 ON 02 MAR 2005

L1 1 S US5861386/PN

SELECT L1 1 RN

L2 455369 S E1-E10

FILE 'REGISTRY' ENTERED AT 15:47:34 ON 02 MAR 2005

L3 1 S 13408-78-1/RN

SET NOTICE 1 DISPLAY

SET NOTICE LOGIN DISPLAY

FILE 'REGISTRY' ENTERED AT 15:48:01 ON 02 MAR 2005

L4 1 S 143032-85-3/RN

SET NOTICE 1 DISPLAY

SET NOTICE LOGIN DISPLAY

FILE 'REGISTRY' ENTERED AT 15:48:49 ON 02 MAR 2005

L5 1 S 156316-85-7/RN

SET NOTICE 1 DISPLAY

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FILE 'REGISTRY' ENTERED AT 15:50:21 ON 02 MAR 2005

L6 1 S 157893-62-4/RN

SET NOTICE 1 DISPLAY

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FILE 'REGISTRY' ENTERED AT 15:50:58 ON 02 MAR 2005

L7 1 S 36465-90-4/RN

SET NOTICE 1 DISPLAY

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FILE 'REGISTRY' ENTERED AT 15:51:21 ON 02 MAR 2005

L8 1 S 54573-75-0/RN

SET NOTICE 1 DISPLAY

SET NOTICE LOGIN DISPLAY

FILE 'CAPLUS' ENTERED AT 15:52:49 ON 02 MAR 2005

L9 176 S L8 OR L6 OR L4 OR L5

L10 299818 S OSTEOPOROSIS OR BONE OR SKELET? OR HYPERPARATHYROID? OR OSTEO

L11 49 S L9(L) L10

L12 8 S L11 NOT PY>=1992

L13 21883 S HYPERPARATHYROID? OR PARATHYROID

L14 27 S L9(L) L13

FILE 'MEDLINE, EMBASE, BIOSIS' ENTERED AT 16:39:50 ON 02 MAR 2005

L15 3265 S HYPERPARATHYROID? (L) (OSTEOPOROSIS OR BONE) (L) RENAL

FILE 'MEDLINE' ENTERED AT 16:41:05 ON 02 MAR 2005

L16 1206 S L15

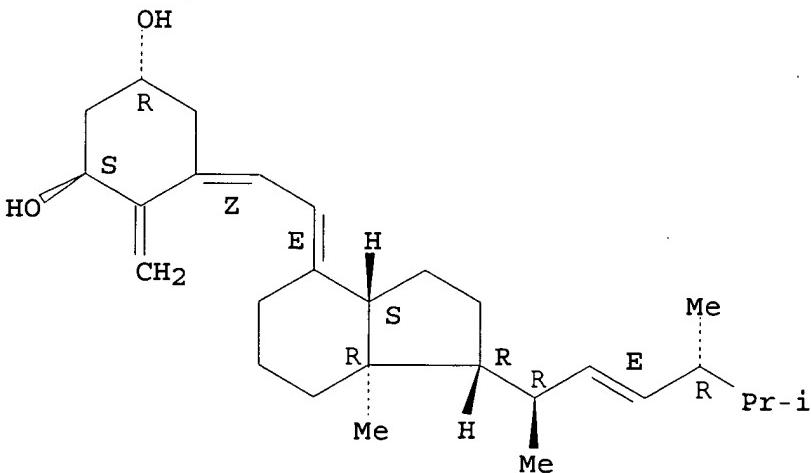
L17 369 S L16 NOT PY>=1988

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L8 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2005 ACS on STN  
 RN 54573-75-0 REGISTRY  
 CN 9,10-Secoergosta-5,7,10(19),22-tetraene-1,3-diol,  
 (1 $\alpha$ ,3 $\beta$ ,5Z,7E,22E)- (9CI) (CA INDEX NAME)  
 OTHER NAMES:  
 CN 1-Hydroxyergocalciferol  
 CN 1-Hydroxyvitamin D2  
 CN 1 $\alpha$ -Hydroxyergocalciferol  
 CN 1 $\alpha$ -Hydroxyvitamin D2  
 CN ~~Doxercalciferol~~  
 CN Hectorol  
 CN TSA 840  
 FS STEREOSEARCH  
 DR 125285-48-5, 87649-67-0  
 MF C28 H44 O2  
 LC STN Files: ADISINSIGHT, ADISNEWS, BEILSTEIN\*, BIOSIS, BIOTECHNO, CA,  
 CANCERLIT, CAPLUS, CASREACT, CBNB, CHEMCATS, CIN, DDFU, DIOGENES, DRUGU,  
 EMBASE, IFICDB, IFIPAT, IFIUDB, IMSDRUGNEWS, IMSPATENTS, IMSRESEARCH,  
 IPA, MEDLINE, MRCK\*, PHAR, PROUSDDR, PS, RTECS\*, SYNTHLINE, TOXCENTER,  
 USAN, USPAT2, USPATFULL  
 (\*File contains numerically searchable property data)

DT.CA Cplus document type: Journal; Patent  
 RL.P Roles from patents: BIOL (Biological study); FORM (Formation, nonpreparative); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)  
 RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

Absolute stereochemistry.  
 Double bond geometry as shown.



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

155 REFERENCES IN FILE CA (1907 TO DATE)  
 156 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L6 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2005 ACS on STN

RN 157893-62-4 REGISTRY

CN 9,10-Secoergosta-5,7,10(19)-triene-1,3,24-triol, (1  $\alpha$ ,3 $\beta$ ,5Z,7E)-  
(9CI) (CA INDEX NAME)

OTHER NAMES:

CN  $1\alpha$ ,24-Dihydroxyvitamin D4

FS STEREOSEARCH

MF C28 H46 O3

SR CA

LC STN Files: CA, CAPLUS, TOXCENTER, USPAT2, USPATFULL

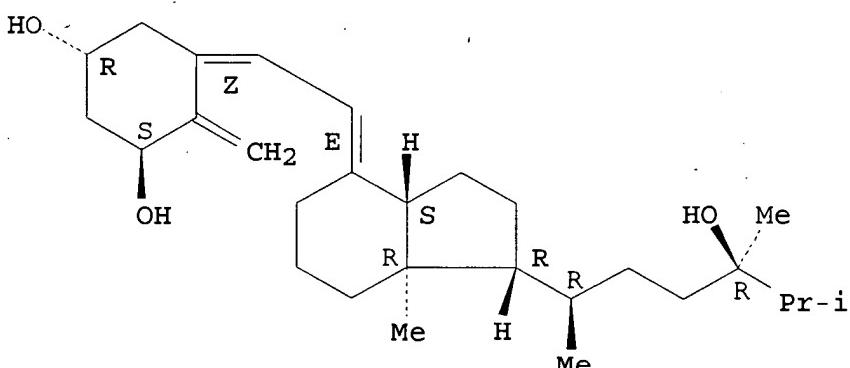
DT.CA CAplus document type: Journal; Patent

RL.P Roles from patents: BIOL (Biological study); PREP (Preparation); PROC  
(Process); USES (Uses)

RL.NP Roles from non-patents: BIOL (Biological study)

Absolute stereochemistry.

Double bond geometry as shown.



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

18 REFERENCES IN FILE CA (1907 TO DATE)

18 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L4 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2005 ACS on STN

RN 143032-85-3 REGISTRY

CN 9,10-Secoergosta-5,7,10(19)-triene-1,3-diol, (1  $\alpha$ ,3 $\beta$ ,5Z,7E)-  
(9CI) (CA INDEX NAME)

OTHER NAMES:

CN 1 $\alpha$ -Hydroxyvitamin D4

FS STEREOSEARCH

MF C28 H46 O2

SR CA

LC STN Files: CA, CAPLUS, TOXCENTER, USPAT2, USPATFULL

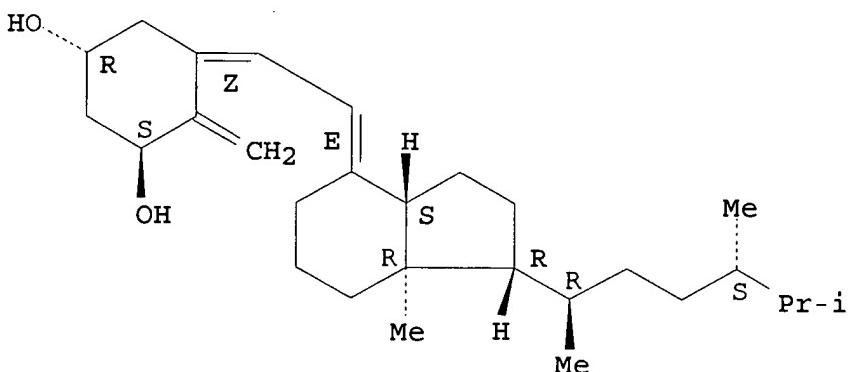
DT.CA CAplus document type: Journal; Patent

RL.P Roles from patents: BIOL (Biological study); FORM (Formation, nonpreparative); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

RL.NP Roles from non-patents: BIOL (Biological study); PREP (Preparation); USES (Uses)

Absolute stereochemistry.

Double bond geometry as shown.



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

25 REFERENCES IN FILE CA (1907 TO DATE)

25 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L5 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2005 ACS on STN  
RN 156316-85-7 REGISTRY  
CN 9,10-Secoergosta-5,7,10(19),22-tetraene-1,3,24-triol,  
(1 $\alpha$ ,3 $\beta$ ,5Z,7E,22E)- (9CI) (CA INDEX NAME)

**OTHER NAMES:**

CN 1 $\alpha$ ,24(S)-Dihydroxyvitamin D2

CN 1 $\alpha$ ,24S-Dihydroxyvitamin D2

FS STEREOSEARCH

MF C28 H44 O3

CI COM

SR CA

LC STN Files: CA, CAPLUS, TOXCENTER, USPAT2, USPATFULL

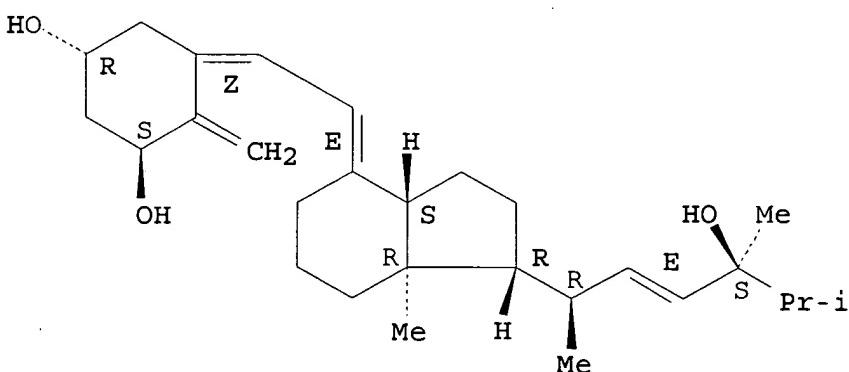
DT.CA Caplus document type: Journal; Patent

RL.P Roles from patents: BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

RL.NP Roles from non-patents: BIOL (Biological study); FORM (Formation, nonpreparative); PREP (Preparation); PROC (Process); USES (Uses)

## Absolute stereochemistry.

Double bond geometry as shown.



**\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\***

28 REFERENCES IN FILE CA (1907 TO DATE)

28 REFERENCES IN FILE CAPLUS (1907 TO DATE)

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L1          1 US5861386/PN

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E1 THROUGH E10 ASSIGNED

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    25 143032-85-3/BI
    28 156316-85-7/BI
    18 157893-62-4/BI
    247 36465-90-4/BI
    156 54573-75-0/BI
    86803 7440-42-8/BI
    352074 7440-70-2/BI
    22224 7681-49-4/BI
    6683 9007-12-9/BI
L2    455369 (13408-78-1/BI OR 143032-85-3/BI OR 156316-85-7/BI OR 157893-62-
        4/BI OR 36465-90-4/BI OR 54573-75-0/BI OR 7440-42-8/BI OR 7440-7
        0-2/BI OR 7681-49-4/BI OR 9007-12-9/BI)
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=> d ibib 1-8

L12 ANSWER 1 OF 8 CAPLUS COPYRIGHT 2005 ACS on STN  
ACCESSION NUMBER: 1991:678635 CAPLUS  
DOCUMENT NUMBER: 115:278635  
TITLE: Effects of vitamin D<sub>2</sub> analogs on calcium metabolism in  
vitamin D-deficient rats and in MC3T3-E1 osteoblastic  
cells  
AUTHOR(S): Sato, F.; Ouchi, Y.; Okamoto, Y.; Kaneki, M.;  
Nakamura, T.; Ikekawa, N.; Orimo, H.  
CORPORATE SOURCE: Fac. Med., Univ. Tokyo, Tokyo, 113, Japan  
SOURCE: Research in Experimental Medicine (1991), 191(4),  
235-42  
DOCUMENT TYPE: CODEN: REXMAS; ISSN: 0300-9130  
LANGUAGE: Journal  
English

L12 ANSWER 2 OF 8 CAPLUS COPYRIGHT 2005 ACS on STN  
ACCESSION NUMBER: 1986:527473 CAPLUS  
DOCUMENT NUMBER: 105:127473  
TITLE: Treating metabolic bone disease in mammals  
INVENTOR(S): DeLuca, Hector F.; Schnoes, Heinrich K.  
PATENT ASSIGNEE(S): Wisconsin Alumni Research Foundation, USA  
SOURCE: U.S., 9 pp. Cont.-in-part of U.S. Ser. No. 607,327,  
abandoned.  
CODEN: USXXAM  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 3  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4588716	A	19860513	US 1985-691824	19850116
PRIORITY APPLN. INFO.:			US 1984-607327	A2 19840504

L12 ANSWER 3 OF 8 CAPLUS COPYRIGHT 2005 ACS on STN  
ACCESSION NUMBER: 1985:606855 CAPLUS  
DOCUMENT NUMBER: 103:206855  
TITLE: The effect of 1  $\alpha$ -hydroxyvitamin D<sub>2</sub> on calcium  
metabolism in glucocorticoid-treated rats  
AUTHOR(S): Sjoeden, G. O. J.; Lindgren, J. U.; Deluca, H. F.  
CORPORATE SOURCE: Huddinge Univ. Hosp., Karolinska Inst., Huddinge,  
S-141 86, Swed.  
SOURCE: Bone (New York, NY, United States) (1985), 6(4), 231-4  
CODEN: BONEDL; ISSN: 8756-3282  
DOCUMENT TYPE: Journal  
LANGUAGE: English

L12 ANSWER 4 OF 8 CAPLUS COPYRIGHT 2005 ACS on STN  
ACCESSION NUMBER: 1985:147935 CAPLUS  
DOCUMENT NUMBER: 102:147935  
TITLE: 1  $\alpha$ -Hydroxyvitamin D<sub>2</sub> is less toxic than  
1  $\alpha$ -hydroxyvitamin D<sub>3</sub> in the rat  
AUTHOR(S): Sjoeden, Goeran; Smith, Connie; Lindgren, Urban;  
DeLuca, Hector F.  
CORPORATE SOURCE: Coll. Agric. Life Sci., Univ. Wisconsin, Madison, WI,  
53706, USA  
SOURCE: Proceedings of the Society for Experimental Biology  
and Medicine (1985), 178(3), 432-6  
CODEN: PSEBAA; ISSN: 0037-9727  
DOCUMENT TYPE: Journal

LANGUAGE: English

L12 ANSWER 5 OF 8 CAPLUS COPYRIGHT 2005 ACS on STN  
ACCESSION NUMBER: 1984:523324 CAPLUS  
DOCUMENT NUMBER: 101:123324  
TITLE: Effects of 1  $\alpha$ OHD<sub>2</sub> on bone tissue. Studies of 1  $\alpha$ OHD<sub>2</sub> and 1 $\alpha$ OHD<sub>3</sub> in normal rats and in rats treated with prednisolone  
AUTHOR(S): Sjoeden, G. O. J.; Johnell, O.; DeLuca, H. F.; Lindgren, J. U.  
CORPORATE SOURCE: Karolinska Inst., Huddinge Hosp., Huddinge, S-141 86, Swed.  
SOURCE: Acta Endocrinologica (1984), 106(4), 564-8  
CODEN: ACENA7; ISSN: 0001-5598  
DOCUMENT TYPE: Journal  
LANGUAGE: English

L12 ANSWER 6 OF 8 CAPLUS COPYRIGHT 2005 ACS on STN  
ACCESSION NUMBER: 1981:373 CAPLUS  
DOCUMENT NUMBER: 94:373  
TITLE: Treating calcium imbalance and improving calcium absorption in mammals  
INVENTOR(S): DeLuca, Hector F.  
PATENT ASSIGNEE(S): Wisconsin Alumni Research Foundation, USA  
SOURCE: U.S., 3 pp.  
CODEN: USXXAM  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4225596	A	19800930	US 1978-951320	19781013
PRIORITY APPLN. INFO.:			US 1978-951320	A 19781013

L12 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2005 ACS on STN  
ACCESSION NUMBER: 1978:103619 CAPLUS  
DOCUMENT NUMBER: 88:103619  
TITLE: Biological activity of 1  $\alpha$ -hydroxyvitamin D<sub>2</sub> in the rat  
AUTHOR(S): Reeve, L. E.; Schnoes, H. K.; DeLuca, H. F.  
CORPORATE SOURCE: Coll. Agric. Life Sci., Univ. Wisconsin, Madison, WI, USA  
SOURCE: Archives of Biochemistry and Biophysics (1978), 186(1), 164-7  
CODEN: ABBIA4; ISSN: 0003-9861  
DOCUMENT TYPE: Journal  
LANGUAGE: English

L12 ANSWER 8 OF 8 CAPLUS COPYRIGHT 2005 ACS on STN  
ACCESSION NUMBER: 1975:132956 CAPLUS  
DOCUMENT NUMBER: 82:132956  
TITLE: 1  $\alpha$ -Hydroxy vitamin D<sub>2</sub>. Potent synthetic analog of vitamin D<sub>2</sub>  
AUTHOR(S): Lam, H. Y.; Schnoes, H. K.; DeLuca, H.  
CORPORATE SOURCE: Coll. Agric. Life Sci., Univ. Wisconsin, Madison, WI, USA  
SOURCE: Science (Washington, DC, United States) (1974), 186(4168), 1038-40  
CODEN: SCIEAS; ISSN: 0036-8075  
DOCUMENT TYPE: Journal

LANGUAGE :

English

L12 ANSWER 8 OF 8 CAPLUS COPYRIGHT 2005 ACS on STN  
ACCESSION NUMBER: 1975:132956 CAPLUS  
DOCUMENT NUMBER: 82:132956  
TITLE: 1  $\alpha$ -Hydroxy vitamin D2. Potent synthetic analog  
of vitamin D2  
AUTHOR(S): Lam, H. Y.; Schnoes, H. K.; DeLuca, H.  
CORPORATE SOURCE: Coll. Agric. Life Sci., Univ. Wisconsin, Madison, WI,  
USA  
SOURCE: Science (Washington, DC, United States) (1974),  
186(4168), 1038-40  
CODEN: SCIEAS; ISSN: 0036-8075  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
GI For diagram(s), see printed CA Issue.  
AB A hydroxy analog of vitamin D2, 1  $\alpha$ -hydroxyvitamin D2 (I) [54573-75-0] was synthesized and was active in stimulating intestinal calcium [7440-70-2] transport and bone Ca mobilization in the rat and exhibited antirachitic activity. Its biopotency was comparable to that of the corresponding vitamin D3 analog, 1 $\alpha$ -hydroxyvitamin D [41294-56-8].

ACCESSION NUMBER: 1981:373 CAPLUS

DOCUMENT NUMBER: 94:373

TITLE: Treating calcium imbalance and improving calcium absorption in mammals

INVENTOR(S): DeLuca, Hector F.

PATENT ASSIGNEE(S): Wisconsin Alumni Research Foundation, USA

SOURCE: U.S., 3 pp.

CODEN: USXXAM

DOCUMENT TYPE: Patent

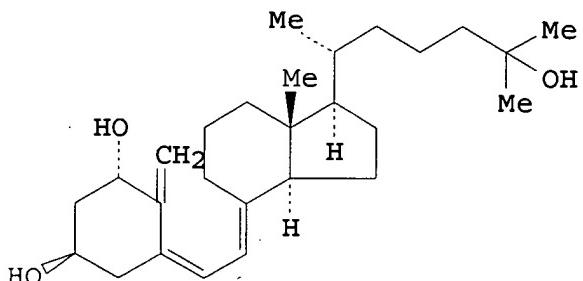
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4225596	A	19800930	US 1978-951320	19781013
PRIORITY APPLN. INFO.:			US 1978-951320	A 19781013

GI



AB In postmenopausal women receiving 1,25-dihydroxycholecalciferol (I) [32222-06-3] (0.5 µg/day), Ca absorption and Ca balance (Ca intake minus urinary and fecal Ca output) were dramatically improved. Other compds. within the scope of the claims are 1 α-hydroxycholecalciferol [41294-56-8], 1 α-hydroxyergocalciferol [54573-75-0], 1,25-dihydroxyergocalciferol [55248-15-2], 1,24,25-trihydroxycholecalciferol [50648-94-7], and 1,24-dihydroxycholecalciferol [60965-80-2]. Thus, the cholecalciferol derivs. may be useful for treating metabolic bone disease characterized by loss of bone mass and improving the Ca balance and absorption in mammals, particularly postmenopausal women.